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ABSTRACT OF THE DISCLOSURE

A process for cracking an olefin-rich hydrocarbon feedstock which is selective towards light olefins in the effluent, the process comprising contacting a hydrocarbon feedstock containing olefins having a first composition of one or more olefinic components with a crystalline silicate catalyst to produce an effluent having a second composition of one or more olefinic components, the feedstock and the effluent having substantially the same olefin content by weight therein, the feedstock contacting the catalyst in the presence of hydrogen for enhancing the stability of the catalyst.